



# Green Spaces Inventory Teacher Reference

## Green Spaces – General Section

The purpose of this section is to give students an overview of how the green spaces around their school are generally used and maintained.

	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards	
1.	Who is responsible for maintaining the school grounds?	Create a seasonal log to track changes around your school. Put it on a website to share with schools in other areas of the state.  Start a phenology log. Assign a student per each school day of each month to observe the outdoors and record at least one observation. At the end of the year design a calendar based on the log for the next year’s students.  Create a feature on your school grounds that will attract wildlife. Devise and implement a plan to increase the biodiversity around your school.  Review the Southeast Exotic Pest Plant Council Web site and determine if any of the plants are growing near your school. Make a list of the top 5 and talk to grounds maintenance staff about removing them.  Make a map of the area around your school. Highlight areas you believe have educational value. Annotate the map with descriptions of the sites you have	Kentucky Bluebird Society <a href="http://www.biology.eku.edu/kbs/default.html">http://www.biology.eku.edu/kbs/default.html</a>  Wild Ones Natural Landscapes <a href="http://www.for-wild.org/">http://www.for-wild.org/</a>  Kentucky chapter of Wild Ones <a href="http://www.for-wild.org/chapters.html">http://www.for-wild.org/chapters.html</a>  Developing Outdoor Learning Areas—A Kentucky Guide <a href="http://www.state.ky.us/agencies/envred/DevelopingOutdoorLearning.pdf">http://www.state.ky.us/agencies/envred/DevelopingOutdoorLearning.pdf</a>  Kentucky Ornithological Society <a href="http://www.biology.eku.edu/kos/default.htm">http://www.biology.eku.edu/kos/default.htm</a>  Fish and Wildlife Backyard Habitat Program <a href="http://fw.ky.gov/navigation.asp?cid=229&amp;NavPath=C130C174">http://fw.ky.gov/navigation.asp?cid=229&amp;NavPath=C130C174</a>  Journey North—A global study of wildlife migration and seasonal change. <a href="http://www.learner.org/jnorth/">http://www.learner.org/jnorth/</a>  Learn about starting a phenology log <a href="http://www.naturenet.com/earthalive/mmsd/phenology.asp">http://www.naturenet.com/earthalive/mmsd/phenology.asp</a>  Kentucky Climate Center resources <a href="http://kyclim.wku.edu/">http://kyclim.wku.edu/</a>  Southeast Exotic Pest Plant Council—view pictures of common invasive weeds in the southeast. <a href="http://www.se-eppc.org/weeds.cfm">http://www.se-eppc.org/weeds.cfm</a>	Primary  SC-EP-4.7.1 Students will describe the cause and effect relationships existing between organisms and their environments.  The world has many different environments. Organisms require an environment in which their needs can be met. When the environment changes some plants and animals survive and reproduce and others die or move to new locations. DOK 2	
2.	How much class time is spent outdoors on the school grounds?			Fourth Grade  SC-04-4.7.1 Students will make predictions and/or inferences based on patterns of evidence related to the survival and reproductive success of organisms in particular environments.  The world has many different environments. Distinct environments support the lives of different types of organisms. When the environment changes some plants and animals survive and reproduce and others die or move to new locations. Examples of environmental changes resulting in either increase or decrease in numbers of a particular organism should be explored in order to discover patterns and resulting cause and effect relationships between organisms and their environments (e.g., structures and behaviors that make an organism suited to a particular environment). Connections and conclusions should be made based on the data. DOK 3	
3.	Does anyone at your school keep a log of seasonal changes (e.g., weather patterns, flowers blooming, wildlife behavior) occurring on your school grounds?  Yes <input type="checkbox"/> No <input type="checkbox"/> Please explain:			SS-04-4.1.1 Students will use geographic tools (e.g., maps, charts, graphs) to identify and describe natural resources and other physical characteristics (e.g., major landforms, major bodies of water, weather, climate, roads, bridges) in regions of Kentucky and the United States. DOK 2	
4.	Does your school have any of the following features to attract wildlife?  A. Bat or bird houses Yes <input type="checkbox"/> No <input type="checkbox"/> B. Feeders Yes <input type="checkbox"/> No <input type="checkbox"/> C. Water Yes <input type="checkbox"/> No <input type="checkbox"/> D. Butterfly Gardens Yes <input type="checkbox"/> No <input type="checkbox"/> E. Natural habitat areas Yes <input type="checkbox"/> No <input type="checkbox"/> F. Other (please explain) _____			Fifth Grade  SC-05-4.7.1 Students will: <ul style="list-style-type: none"><li>describe and categorize populations of organisms according to the function they serve in an ecosystem (e.g., producers, consumers, decomposers);</li><li>draw conclusions about the effects of changes to populations in an ecosystem.</li></ul> Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use	
5.	Are any plants or animals found on the school grounds considered undesirable or “nuisances?”  Yes <input type="checkbox"/> No <input type="checkbox"/> Please explain:				
6.	How would you rate* the biodiversity on the school grounds?  *High – greater than 100 different species of visible plant or animal life <input type="checkbox"/>  Medium – 40 to 99 different species of				



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	<p>small plants and insects mostly; few vertebrate or tree species live or visit the grounds <input type="checkbox"/></p> <p>Low – less than 40 different species; little variety of plant and animal life <input type="checkbox"/></p>	<p>highlighted. Print copies and share with teachers at your school.</p> <p>As a class or in groups, create a large map of your county. Include rivers, creeks, caves, natural areas and national forests or parks in your county. Put your school on the map to see how close you are to these places.</p>		<p>waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers and decomposers in an ecosystem. Using data gained from observing interacting components within an ecosystem, the effects of changes can be predicted. DOK 3</p> <p>SS-05-4.1.1 Students will use geographic tools (e.g., maps, charts, graphs) to identify natural resources and other physical characteristics (e.g., major landforms, major bodies of water, weather, climate, roads, bridges) and analyze patterns of movement and settlement in the United States. DOK 3</p> <p>Sixth Grade</p> <p>SS-06-4.1.1 Students will use a variety of geographic tools (maps, photographs, charts, graphs, databases, satellite images) to interpret patterns and locations on Earth's surface in the present day. DOK 3</p> <p>SC-06-4.7.1 Students will describe the consequences of change in one or more abiotic factors on a population within an ecosystem.</p> <p>The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). DOK 2</p> <p>Seventh Grade</p> <p>SC-07-4.7.1 Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors.</p> <p>The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. DOK 3</p> <p>Eighth Grade</p> <p>SC-08-4.7.1 Students will describe the interrelationships and interdependencies within an ecosystem and predict the effects of change on one or more components within an ecosystem.</p>								
7.	<p>What type of land borders your school (e.g., residential, agricultural, natural areas such as rivers or forests, commercial, industrial)? Please list all by compass direction.</p> <table><tr><td>A. East</td><td></td></tr><tr><td>B. West</td><td></td></tr><tr><td>C. North</td><td></td></tr><tr><td>D. South</td><td></td></tr></table>	A. East		B. West		C. North		D. South				
A. East												
B. West												
C. North												
D. South												
8.	<p>What other nearby “green spaces” are suitable for educational purposes (e.g., community park two blocks away, green belt along the river within walking distance of school property, non-profit historical farm located a 5-mile bus trip away, permission from the landowner to use the vacant lot next door)?</p>											
9.	<p>How are field studies or related outdoor classroom topics incorporated into each grade's curriculum?</p>											
10.	<p>Who conducted the Green Spaces Inventory (e.g., Mrs. Wood's fourth grade class with help from Mr. Turf, maintenance worker, local Home Depot store, and the local natural resources conservation district)?</p>											



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11.	<p>Survey the grounds around your school. Determine whether you have any of the following green spaces. When you have completed the table below, continue the inventory ONLY answering questions in those sections that you marked “yes”.</p> <p>A. Courtyards?      Yes <input type="checkbox"/> No <input type="checkbox"/> B. Lawns?*         Yes <input type="checkbox"/> No <input type="checkbox"/> C. Athletic fields /   Playgrounds?     Yes <input type="checkbox"/> No <input type="checkbox"/> D. Gardens?        Yes <input type="checkbox"/> No <input type="checkbox"/> E. Aquatic   communities?**    Yes <input type="checkbox"/> No <input type="checkbox"/> F. Wooded areas?    Yes <input type="checkbox"/> No <input type="checkbox"/> G. Other?***        Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>* - <b>Lawns</b> - mowed areas not used for playground or athletics</p> <p>**<b>Aquatic communities</b> - ponds, lakes, rivers, streams, wetlands, ditches, and man- made water features included in an outdoor classroom.</p> <p>***<b>Other</b> - abandoned fields or grassy areas that have not been mowed or farmed for several years and may be reverting to a “natural state” or parking lots, caves, erosional areas with bare soil, above ground or underground storage areas, dumps, etc.</p>			<p>Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</p> <p>High School</p> <p>SC-HS-4.7.1 Students will:</p> <ul style="list-style-type: none"><li>• analyze relationships and interactions among organisms in ecosystems;</li><li>• predict the effects on other organisms of changes to one or more components of the ecosystem.</li></ul> <p>Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</p> <p>SS-HS-4.1.1 Students will use a variety of geographic tools (e.g., maps, globes, photographs, models, satellite images, charts, graphs, databases) to explain and analyze the reasons for the distribution of physical and human features on Earth's surface. DOK 3</p>
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Green Spaces – Courtyard Section				
Fill out this section only if your school has a courtyard.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
12.	What purpose does your courtyard serve?	Create a plan that will allow teachers and students to use your courtyard as a learning center. Share your plan with the Site Based Council.	Southeast Exotic Pest Plant Council—view pictures of common invasive weeds in the southeast. <a href="http://www.se-eppc.org/weeds.cfm">http://www.se-eppc.org/weeds.cfm</a>	Primary SC-EP-2.3.2 Students will describe patterns in weather and weather data in order to make simple predictions based on those patterns discovered.
13.	Who uses the courtyard?  A. Classes?            Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs?    Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes?        Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class?    Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff?                Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members?        Yes <input type="checkbox"/> No <input type="checkbox"/>	On a world map, trace the source of all the synthetic or manufactured materials used in the courtyard. Figure out approximately how much energy it took to get all those things to your school.	A Teacher's Guide to Creating a School Butterfly Garden <a href="http://www.monarchwatch.org/garden/guide.htm">http://www.monarchwatch.org/garden/guide.htm</a>  Butterflies and Moths of Kentucky <a href="http://www.butterfliesandmoths.org/map?ds=18&amp; dcs=1">http://www.butterfliesandmoths.org/map?ds=18&amp; dcs=1</a>	Weather changes from day to day and over seasons. Weather can be described using observations and measurable quantities such as temperature, wind direction, wind speed and precipitation. Simple predictions can be made by analyzing collected data for patterns.  Fourth Grade SC-EP-4.6.2 Students will describe evidence of the sun providing light and heat to the Earth.  Simple observations and investigations begin to reveal that the Sun provides the light and heat necessary to maintain the temperature of Earth. Based on those experiences, the conclusion can be drawn that the Sun's light and heat are necessary to sustain life on Earth. DOK 2
14.	How often is the courtyard used (e.g. every day for one hour, once a week for 20 minutes)?	Review the Southeast Exotic Pest Plant Council Web site and determine if any of the plants are growing near your school. Make a list of the top 5 and talk to grounds maintenance staff about removing them.		SC-04-2.3.3 Students will make generalizations and/or predictions about weather changes from day to day and over seasons based on weather data.  Weather changes from day to day and over seasons. Weather can be described by observations and measurable quantities such as temperature, wind direction, wind speed and precipitation. Data can be displayed and used to make predictions. DOK 3
15.	What type of vegetation (e.g., species, vegetation types, percent of coverage) is growing in your courtyard?			SC-04-4.6.2 Students will: <ul style="list-style-type: none"><li>• analyze data/evidence of the Sun providing light and heat to earth;</li><li>• use data/evidence to substantiate the conclusion that the Sun's light and heat are necessary to sustaining life on Earth.</li></ul> Simple observations, experiments and data collection begin to reveal that the Sun provides the light and heat necessary to maintain the temperature of Earth. Evidence



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16.	What are the growing conditions for plants in the courtyard?  A. Amount of sunlight? B. Temperature range? C. Water? D. Soil? E. Space?			collected and analyzed should be used to substantiate the conclusion that the sun's light and heat are necessary to sustain life on Earth. DOK 3  Fifth Grade  SC-05-4.6.2 Students will understand that the Sun is a major source of energy for changes on Earth's surface. The Sun loses energy by emitting light. A tiny fraction of that light reaches Earth, transferring energy from the Sun to Earth.
17.	How is the vegetation maintained? (e.g. mowing, pesticides, mulching)			Sixth Grade  SC-06-4.6.2 Students will describe: the effect of the Sun's energy on the Earth system; the connection/relationship between the Sun's energy and seasons.  The Sun is the major source of energy for Earth. The water cycle, winds, ocean currents and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface. DOK 3
18.	What animal life is found in the courtyard?			Seventh Grade  SC-07-4.6.4 Students will describe or represent the flow of energy in ecosystems, using data to draw conclusions about the role of organisms in an ecosystem.  For most ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism in food webs. DOK 3
19.	What non-living features are found in the courtyard (e.g., rocks, pavement, benches)?			Eighth Grade  SC-08-4.6.5 Students will: describe the relationships between organisms and energy flow in ecosystems (food chains and energy pyramids); explain the effects of change to any component of the ecosystem.  Energy flows through ecosystems in one direction from photosynthetic organisms to herbivores to carnivores and decomposers. DOK 2
20.	From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance) are these non-living features made?			High School  SC-HS-4.6.9 Students will: <ul style="list-style-type: none"><li>explain the cause and effect relationship between global climate and weather patterns and energy transfer (cloud cover, location of mountain ranges, oceans);</li><li>predict the consequences of changes to the global climate and weather patterns.</li></ul>



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				<p>Global climate is determined by energy transfer from the Sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and the Earth's rotation and static conditions such as the position of mountain ranges and oceans.</p> <p>DOK 3</p>
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Green Spaces – Lawns Section				
Fill out this section only if your school has lawns.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
21.	What purposes do the lawns serve?	Create a landscaping plan for your school that would require less mowing and fertilizing and use fewer pesticides. Include native species and wildlife habitat.  With permission from your principal, raise the money, buy (or get donated) the plants and invite parents and the community to help you implement your design.  Create a fact sheet to help people have healthier lawns without using too much fertilizer and pesticides. Send these fact sheets home with each child.	Hundreds of ideas on observing the school's backyard or yours! <a href="http://www.backyardnature.net/">http://www.backyardnature.net/</a>  how to create wildlife habitat <a href="http://www.nwf.org/backyard/">http://www.nwf.org/backyard/</a>  Tips for a pesticide free, healthy lawn <a href="http://www.richsoil.com/lawn/index.jsp">http://www.richsoil.com/lawn/index.jsp</a>  FAQs about pesticide free lawns <a href="http://faq.gardenweb.com/faq/lists/organic/2004020829016580.html">http://faq.gardenweb.com/faq/lists/organic/2004020829016580.html</a>  Ideas for sustainable urban landscaping <a href="http://www.sustland.umn.edu/">http://www.sustland.umn.edu/</a>  Get answers from experts to questions about native species in Kentucky <a href="http://www.knps.org/">http://www.knps.org/</a>	Primary  SC-EP-1.1.1 Students will classify material objects by their properties providing evidence to support their classifications.  SC-EP-3.4.1 Students will explain the basic needs of organisms.  Organisms have basic needs. For example, animals need air, water and food; plants need air, water, nutrients and light. Organisms can survive only in environments in which their needs can be met. DOK 2  SC-EP-3.4.4 Students will describe a variety of plant and animal life cycles to understand patterns of the growth, development, reproduction and death of an organism.  Plants and animals have life cycles that include the beginning of life, growth and development, reproduction and death. The details of a life cycle are different for different organisms. Observations of different life cycles should be made in order to identify patterns and recognize similarities and differences. DOK 2  Fourth Grade  SC-04-3.4.1 Students will: • compare the different structures and functions of plants and animals that contribute to the growth, survival and reproduction of the organisms; • make inferences about the relationship between structure and function in organisms.  Each plant or animal has structures that serve different functions in growth, survival and reproduction. For example, humans have distinct body structures for walking, holding, seeing and talking. Evidence about the relationship between structure and function should be used to make inferences and draw conclusions. DOK 3
22.	Who uses the lawns?  A. Classes? Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs? Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes? Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class? Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff? Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members? Yes <input type="checkbox"/> No <input type="checkbox"/>			
23.	How often are the lawns used (e.g. every day for one hour, once a week for 20 minutes)?			
24.	What kinds of plants (e.g., grass species, herbaceous plants) are growing in your lawns?			
25.	Are these plants native to your area?			
26.	What fertilizers and pesticides (including type, quantity and frequency) are applied to the lawns?			
27.	How is the need for pesticides or fertilizers for lawns determined?			
28.	How often are lawns mowed (e.g., once a week during growing season, when grass reaches 4" tall, so 1/3 height of grass is removed with each mowing)?			
29.	What happens to grass clippings from mowing?			
30.	Are trees growing in the lawns to provide shade and changes in habitat?			
31.	What happens to tree leaves/branches that fall?			



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32.	When are lawns watered (e.g., twice a week in the morning, daily in the evening as needed, not watered)?			<p>Fifth Grade</p> <p>SC-05-3.4.1 Students will describe and compare living systems to understand the complementary nature of structure and function. Observations and comparisons of living systems at all levels of organization illustrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems. Examining the relationship between structure and function provides a basis for comparisons and classification schemes. DOK 2</p>
33.	What animals live in and around the lawn areas?			<p>Sixth Grade</p> <p>SC-06-4.7.1 Students will describe the consequences of change in one or more abiotic factors on a population within an ecosystem. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). DOK</p>
34.	What non-living features are found in the courtyard (e.g., rocks, pavement, benches)?			<p>Seventh Grade</p> <p>SC-07-4.7.1 Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. DOK 3</p>
35.	From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance) are these non-living features made?			<p>Eighth Grade</p> <p>SC-08-4.7.1 Students will describe the interrelationships and interdependencies within an ecosystem and predict the effects of change on one or more components within an ecosystem. Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</p> <p>High School</p> <p>SC-HS-4.7.1 Students will: • analyze relationships and interactions among organisms in ecosystems; • predict the effects on other organisms of changes to one or more components of the ecosystem.</p> <p>Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the</p>



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				<p>entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</p> <p>SC-HS-4.7.2 Students will:</p> <ul style="list-style-type: none"><li>• evaluate proposed solutions from multiple perspectives to environmental problems caused by human interaction;</li><li>• justify positions using evidence/data.</li></ul> <p>Human beings live within the world's ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected. DOK 3</p>
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Green Spaces – Athletic Fields/Playgrounds Section				
Fill out this section only if you have athletic fields or playgrounds.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
36.	What purpose do the athletic fields / playgrounds serve?	Using the websites provided, create a safety plan for you athletic fields or playground.  Create a PowerPoint and brochure that makes the plan easy to understand. Share the plan with teachers and students.	Ideas from the National Program on Playground Safety on how to make your playground safer <a href="http://www.uni.edu/playground/">http://www.uni.edu/playground/</a>  More on playground safety from <a href="http://www.kidshealth.org/parent/firstaid_safe/outdoor/playground.html">http://www.kidshealth.org/parent/firstaid_safe/outdoor/playground.html</a>  Resources for many types of safe and healthy play areas <a href="http://www.b4ubuild.com/links/play_areas.shtml">http://www.b4ubuild.com/links/play_areas.shtml</a>  A guide to ADA accessibility for playgrounds <a href="http://www.access-board.gov/play/guide/intro.htm">http://www.access-board.gov/play/guide/intro.htm</a>  A review of the book, “Last Child in the Woods: Nature Deficit Disorder” <a href="http://www.hookedonnature.org/lastchild.html">http://www.hookedonnature.org/lastchild.html</a>	Primary  SC-EP-3.4.1 Students will explain the basic needs of organisms.  Organisms have basic needs. For example, animals need air, water and food; plants need air, water, nutrients and light. Organisms can survive only in environments in which their needs can be met. DOK 2  SC-EP-3.4.4 Students will describe a variety of plant and animal life cycles to understand patterns of the growth, development, reproduction and death of an organism.  Plants and animals have life cycles that include the beginning of life, growth and development, reproduction and death. The details of a life cycle are different for different organisms. Observations of different life cycles should be made in order to identify patterns and recognize similarities and differences. DOK 2  SC-EP-1.1.1 Students will classify material objects by their properties providing evidence to support their classifications.  Objects are made of one or more materials such as paper, wood, and metal. Objects can be described by the properties of the materials from which they are made. Those properties and measurements of the objects can be used to separate or classify objects or materials. DOK 3  SS-EP-3.3.2 Students will explain different ways that people acquire goods and services (by trading/bartering goods and services for other goods and services or by using money).  PL-EP-2.2. 5 Students will identify rules of play and sportsmanship for spectators and
37.	Who uses the athletic fields / playgrounds?  A. Classes?                      Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs?                Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes?                Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class?                Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff?                            Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members?                Yes <input type="checkbox"/> No <input type="checkbox"/>			
38.	How often are the athletic fields / playgrounds used (e.g. every day for one hour, once a week for 20 minutes)?			
39.	What type of vegetation (e.g., plant species, percentage of cover) is growing in your athletic fields/playgrounds?			
40.	How is vegetation maintained (e.g., mowing, watering, fertilizers, pesticides)?			
41.	How is the need for pesticides and fertilizers for the athletic fields/playgrounds determined?			
42.	Do your athletic fields/playgrounds have shade trees?			
43.	What animal life is found on the athletic fields/playgrounds?			



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44.	What non-living features are found on the athletic fields/playgrounds (e.g., equipment, pavement, bleachers)?			participants during games and/or activities that make them safe and enjoyable.
45.	From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance, playground surface, lead-free paint) are these non-living features made?			<p>Fourth Grade</p> <p>SC-04-3.4.1 Students will:</p> <ul style="list-style-type: none"><li>• compare the different structures and functions of plants and animals that contribute to the growth, survival and reproduction of the organisms;</li><li>• make inferences about the relationship between structure and function in organisms. Each plant or animal has structures that serve different functions in growth, survival and reproduction. For example, humans have distinct body structures for walking, holding, seeing and talking. Evidence about the relationship between structure and function should be used to make inferences and draw conclusions.</li></ul> <p>DOK 3</p> <p>SS-04-3.3.1 Students will give examples of markets; explain how they function and how the prices of goods and services are determined by supply and demand.</p> <p>DOK 2</p> <p>PL-04-2.2.5 Students will explain how rules of play and sportsmanship for spectators and participants during games and/or activities make them safe and enjoyable</p>
46.	<p>What safety measures are used on the athletic fields/playgrounds?</p> <p>A. Fall zones? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>B. Staff supervision? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>C. No protrusion or splintering hazards? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>D. Pinch-free points? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>E. No openings where head can be entrapped? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>F. Guard rails? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>G. Shock-absorbing surface? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>H. Other? Please Explain. _____</p>			<p>Fifth Grade</p> <p>SC-05-3.4.1 Students will describe and compare living systems to understand the complementary nature of structure and function. Observations and comparisons of living systems at all levels of organization illustrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems. Examining the relationship between structure and function provides a basis for comparisons and classification schemes.</p> <p>DOK 2</p> <p>Sixth Grade</p> <p>PL-06-2.2.5 Students will identify rules of behavior and fair play (e.g., accepting authoritative decisions, assessing one's own performance level, accepting skills and abilities of others through verbal and nonverbal actions for spectators and/or participants) that are necessary during games and sports.</p> <p>SS-06-3.3.1 Students will explain how in present day market economies, the prices of goods and services are determined by supply and demand.</p> <p>DOK 2</p> <p>Seventh Grade</p> <p>SC-07-4.7.1 Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors.</p>



# Green Spaces Inventory

## Teacher Reference

				<p>The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p> <p>DOK 3</p> <p>PL-07-2.2.5 Students will identify rules of behavior and fair play (e.g., accepting authoritative decisions, assessing one's own performance level, accepting skills and abilities of others through verbal and nonverbal actions for spectators and/or participants) that are necessary during games and sports.</p> <p>Eighth Grade</p> <p>PL-08-2.2.5 Students will analyze the value of rules of behavior and fair play (e.g., accepting authoritative decisions, assessing one's own performance level, accepting skills and abilities of others through verbal and nonverbal actions for spectators and/or participants) during games and sports.</p> <p>SS-08-3.3.1 Students will explain how in the United States prior to Reconstruction, the prices of goods and services were determined by supply and demand. DOK 2</p> <p>High School</p> <p>PL-HS-2.2.5 Students will analyze the value and role of rules, fair play, cooperation and sportsmanship for spectators/participants during games and sports.</p> <p>SC-HS-4.6.5 Students will describe and explain the role of carbon-containing molecules and chemical reactions in energy transfer in living systems.</p> <p>Living systems require a continuous input of energy to maintain their chemical and physical organization since the universal tendency is toward more disorganized states. The energy for life primarily derives from the Sun. Plants capture energy by absorbing light and using it to break weaker bonds in reactants (such as carbon dioxide and water) in chemical reactions that result in the formation of carbon-containing molecules. These molecules can be used to assemble larger molecules (e.g., DNA, proteins, sugars, fats). In addition, the energy released when these molecules react with oxygen to form very strong bonds can be used as sources of energy for life processes. DOK 3</p> <p>SS-HS-3.3.1 Students will explain and give examples of how numerous factors influence the supply and demand of products (e.g., supply—technology, cost of inputs, number of sellers: demand— income, utility, price of similar products, consumers' preferences). DOK 2</p>
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# Green Spaces Inventory

## Teacher Reference

### Green Spaces – Garden Section

Fill this section out only if your school has gardens.

	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
47.	What types of gardens does your school have (e.g., butterfly, vegetable, rain, fruit, herb, flower, habitat)?	Create or substantially improve a garden site at your school. Decide what kind would be best for the space, soil and sunlight you have and plant a garden appropriate for those conditions. Be sure and plan how the plants from your garden will be used.  Examples of gardens and their uses include the following  -An herb garden. Herbs can be dried and either sold to buy more plants, used in the school lunches or given to people in the community  -a vegetable garden or orchard. Gardens that produce food can be used to help supply community kitchens and other food programs.  -A butterfly garden. Plant plants that will attract butterflies. Study the life cycle of the butterflies that come to your garden.  An historic garden. Find out what kinds of crops	Grants from the National Gardening Association <a href="http://www.kidsgardening.com/grants.asp">http://www.kidsgardening.com/grants.asp</a>  Ideas for instructional themes related to gardening <a href="http://www.kidsgardening.com/themes/theme-splash.asp">http://www.kidsgardening.com/themes/theme-splash.asp</a>  Ideas for kids garden projects for every month of the year <a href="http://www.geocities.com/Heartland/Hills/6160/kidsprojects.html">http://www.geocities.com/Heartland/Hills/6160/kidsprojects.html</a>  Ideas for gardening projects with kids from our friends in Great Britain <a href="http://www.bbc.co.uk/gardening/gardening_with_children/">http://www.bbc.co.uk/gardening/gardening_with_children/</a>  A printable gardening guide for kids <a href="http://www.whitneyfarms.com/guide/kids/">http://www.whitneyfarms.com/guide/kids/</a>  Resources from EE-link on gardening and learning <a href="http://eelink.net/pages/EE+Activities+-+School+Gardens">http://eelink.net/pages/EE+Activities+-+School+Gardens</a>	Primary  SC-EP-3.4.1 Students will explain the basic needs of organisms.  Organisms have basic needs. For example, animals need air, water and food; plants need air, water, nutrients and light. Organisms can survive only in environments in which their needs can be met. DOK 2  SC-EP-3.4.4 Students will describe a variety of plant and animal life cycles to understand patterns of the growth, development, reproduction and death of an organism.  Plants and animals have life cycles that include the beginning of life, growth and development, reproduction and death. The details of a life cycle are different for different organisms. Observations of different life cycles should be made in order to identify patterns and recognize similarities and differences. DOK 2  SC-EP-1.1.1 Students will classify material objects by their properties providing evidence to support their classifications.  Objects are made of one or more materials such as paper, wood, and metal. Objects can be described by the properties of the materials from which they are made. Those properties and measurements of the objects can be used to separate or classify objects or materials. DOK 3  SS-EP-3.3.2 Students will explain different ways that people acquire goods and services (by trading/bartering goods and services for other goods and services or by using money).  PL-EP-2.2. 5 Students will identify rules of play and sportsmanship for spectators and participants during games and/or activities that make them safe and enjoyable.
48.	Who uses the gardens?  A. Classes? Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs? Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes? Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class? Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff? Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members? Yes <input type="checkbox"/> No <input type="checkbox"/>			
49.	How are products from the school garden used (left in garden for all to enjoy, given to cafeteria for lunches, sold to community, donated to local food pantry, seeds harvested to replant)?			
50.	What type of vegetation (e.g., plant species, percentage of cover) grows in your gardens?			
51.	What fertilizer and pesticides (including type, quantity and frequency) are applied to the gardens?			
52.	How is the need for pesticides and fertilizers for the gardens determined?			
53.	What animal life is found living in and around the gardens?			
54.	What non-living features are found in the gardens (e.g., equipment, pavement, benches, fences)?			



# Green Spaces Inventory

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55.	<p>From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance) are these non-living features made?</p>	<p>were historically grown in your community that were important to the economy. Plant those plants and label them with historic facts about their uses.</p> <p>A Shakespeare garden. Identify and plant plants mentioned in the plays of William Shakespeare.</p>		<div>Fourth Grade</div> <p>SC-04-3.4.1 Students will:</p> <ul style="list-style-type: none"><li>• compare the different structures and functions of plants and animals that contribute to the growth, survival and reproduction of the organisms;</li><li>• make inferences about the relationship between structure and function in organisms.</li></ul> <p>Each plant or animal has structures that serve different functions in growth, survival and reproduction. For example, humans have distinct body structures for walking, holding, seeing and talking. Evidence about the relationship between structure and function should be used to make inferences and draw conclusions. DOK 3</p> <p>SS-04-3.3.1 Students will give examples of markets; explain how they function and how the prices of goods and services are determined by supply and demand. DOK 2</p> <p>PL-04-2.2.5 Students will explain how rules of play and sportsmanship for spectators and participants during games and/or activities make them safe and enjoyable</p> <div>Fifth Grade</div> <p>SC-05-3.4.1 Students will describe and compare living systems to understand the complementary nature of structure and function. Observations and comparisons of living systems at all levels of organization illustrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems. Examining the relationship between structure and function provides a basis for comparisons and classification schemes. DOK 2</p> <p>SS-05-3.3.1 Students will give examples of markets in different periods of U.S. History (Colonization, Expansion, Industrialization, Twentieth Century to Present) and explain similarities and differences. DOK 2</p> <div>Sixth Grade</div> <p>SS-06-3.3.1 Students will explain how in present day market economies, the prices of goods and services are determined by supply and demand. DOK 2</p> <div>Seventh Grade</div> <p>SC-07-4.7.1 Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors.</p>
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# Green Spaces Inventory

## Teacher Reference

				<p>The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. DOK 3</p> <p>Eighth Grade</p> <p>SC-08-3.4.4 Students will describe and explain patterns found within groups of organisms in order to make biological classifications of those organisms.</p> <p>Observations and patterns found within groups of organisms allow for biological classifications based on how organisms are related. DOK 2</p> <p>High School</p> <p>SC-HS-3.4.7 Students will:</p> <ul style="list-style-type: none"><li>• classify organisms into groups based on similarities;</li><li>• infer relationships based on internal and external structures and chemical processes.</li></ul> <p>Biological classifications are based on how organisms are related. Organisms are classified into a hierarchy of groups and subgroups based on similarities that reflect their relationships. Species is the most fundamental unit of classification. Different species are classified by the comparison and analysis of their internal and external structures and the similarity of their chemical processes. DOK 2</p>
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# Green Spaces Inventory

## Teacher Reference

Green Spaces – Aquatic Communities Section				
Fill this out only if your school has an aquatic community.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
56.	What purpose do the aquatic areas serve?	Create or substantially improve a water feature on your school grounds. Conduct research on the ideal conditions for the type of water feature you choose. Create and implement a plan for constructing or improving this water feature. Include ideas for what students could learn from observing and using the water feature. Provide all this information to the principal.	Contact the local office of the Natural Resource Conservation Service or the local conservation district. Use this searchable database to help you locate them. <a href="http://keec.ky.gov/studenttrack/localgridx.aspx">http://keec.ky.gov/studenttrack/localgridx.aspx</a>  Sources from EE-link on wetlands <a href="http://eelink.net/pages/EE+Activities++Wetlands">http://eelink.net/pages/EE+Activities++Wetlands</a>  The science of rivers and water <a href="http://www.siue.edu/OSME/river/Whatisriversproject/Whatisriverproj.htm">http://www.siue.edu/OSME/river/Whatisriversproject/Whatisriverproj.htm</a>  Get students involved in protecting Kentucky's water <a href="http://www.state.ky.us/agencies/nrepc/water/waterwat.htm">http://www.state.ky.us/agencies/nrepc/water/waterwat.htm</a>  National curriculum on water <a href="http://www.projectwet.org/">http://www.projectwet.org/</a>  How to contact Project WET in Kentucky <a href="http://keec.ky.gov/project_wet.htm">http://keec.ky.gov/project_wet.htm</a>	Primary  SC-EP-3.4.1 Students will explain the basic needs of organisms.  Organisms have basic needs. For example, animals need air, water and food; plants need air, water, nutrients and light. Organisms can survive only in environments in which their needs can be met. DOK 2  SC-EP-3.4.4 Students will describe a variety of plant and animal life cycles to understand patterns of the growth, development, reproduction and death of an organism.  Plants and animals have life cycles that include the beginning of life, growth and development, reproduction and death. The details of a life cycle are different for different organisms. Observations of different life cycles should be made in order to identify patterns and recognize similarities and differences. DOK 2
57.	Who uses the aquatic areas?  A. Classes? Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs? Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes? Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class? Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff? Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members? Yes <input type="checkbox"/> No <input type="checkbox"/>			Fourth Grade  SC-04-3.4.1 Students will: • compare the different structures and functions of plants and animals that contribute to the growth, survival and reproduction of the organisms; • make inferences about the relationship between structure and function in organisms.  Each plant or animal has structures that serve different functions in growth, survival and reproduction. For example, humans have distinct body structures for walking, holding, seeing and talking. Evidence about the relationship between structure and function should be used to make inferences and draw conclusions. DOK 3  Fifth Grade  SC-05-3.4.1 Students will describe and compare living systems to understand the complementary nature of structure and function. Observations and comparisons of living systems at all levels of organization illustrate the complementary nature of structure and function. Important levels of organization for structure and function
58.	How often are the aquatic areas used (e.g. every day for one hour, once a week for 20 minutes)?			
59.	What types of aquatic communities does your school have (e.g., lake, river, pond, stream, ditch, sewage treatment area, wetland, birdbath)?			
60.	What percentage of each aquatic community is: a. Open water? _____% b. Emergent Vegetation (e.g., lilies, cattails, arrowheads)? _____% c. Wet Soil Vegetations (e.g., sedges, rushes, canary grass)? _____% d. Explain how you determined your answer. _____			
61.	What plant species are growing in your aquatic communities?			



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62.	What fertilizers and pesticides (including type, quantity and frequency) are applied to (or near) the aquatic communities?				include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems. Examining the relationship between structure and function provides a basis for comparisons and classification schemes. DOK 2
63.	How is the need for pesticides or fertilizers for the aquatic communities determined?				<div>Sixth Grade</div> <div>SC-06-4.7.1</div> <div>Students will describe the consequences of change in one or more abiotic factors on a population within an ecosystem. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). DOK</div>
64.	What animal species live in and around the aquatic communities?				
65.	Are your aquatic communities fishable?  Yes <input type="checkbox"/> No <input type="checkbox"/> Please explain:				<div>Seventh Grade</div> <div>SC-07-4.7.1</div> <div>Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. DOK 3</div>
66.	What non-living features are found in the aquatic areas (e.g., equipment, boardwalks, piers, trails, signage)?				
67.	From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance, trail surface) are these non-living features made?				<div>Eighth Grade</div> <div>SC-08-4.7.1</div> <div>Students will describe the interrelationships and interdependencies within an ecosystem and predict the effects of change on one or more components within an ecosystem. Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</div> <div><div>High School</div><div>SC-HS-4.7.1</div><div>Students will:</div><div><ul style="list-style-type: none"><li>• analyze relationships and interactions among organisms in ecosystems;</li><li>• predict the effects on other organisms of changes to one or more components of the ecosystem.</li></ul></div><div>Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years. DOK 3</div></div>



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				<p>SC-HS-4.7.2</p> <p>Students will:</p> <ul style="list-style-type: none"><li>• evaluate proposed solutions from multiple perspectives to environmental problems caused by human interaction;</li><li>• justify positions using evidence/data.</li></ul> <p>Human beings live within the world's ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems.</p> <p>These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected.</p> <p>DOK 3</p>
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# Green Spaces Inventory

## Teacher Reference

Green Spaces – Wooded Areas Section				
Fill out this section only If you have wooded areas near on your school grounds.				
	Inventory Questions	Ideas for School Improvement	Resources	Connections to KY Academic Standards
68.	What purposes do the wooded areas serve?	Divide your class into groups of 4 or 5. Give each group a hula hoop or a loop of string. Assign groups different areas of the school grounds. Have them place their hoop or string in a certain spot and count the different species they find within it. Give them magnifying lenses and have them draw the species they see. Let them dig a small hole to look underground. Compile the lists to determine how much biodiversity there is. Which areas of the grounds were most diverse? Why? How can you increase biodiversity?	A review of the groundbreaking book, Last Child in the woods <a href="http://www.hookedonnature.org/lastchild.html">http://www.hookedonnature.org/lastchild.html</a>  Ecosystem Matters: Activity and Resource Guide (Activities for all grade levels) <a href="http://www.na.fs.fed.us/spfo/pubs/misc/eco/index.html">http://www.na.fs.fed.us/spfo/pubs/misc/eco/index.html</a>  Urban Forestry Laboratory Exercises (Elementary, Middle, and High School) <a href="http://www.na.fs.fed.us/spfo/pubs/uf/lab_exercises/table.htm">http://www.na.fs.fed.us/spfo/pubs/uf/lab_exercises/table.htm</a>  Resources from EE-link on forests and woodlands <a href="http://eelink.net/environmentallinks-forestryandagriculture.html">http://eelink.net/environmentallinks-forestryandagriculture.html</a>	Primary  SC-EP-3.4.1 Students will explain the basic needs of organisms.  Organisms have basic needs. For example, animals need air, water and food; plants need air, water, nutrients and light. Organisms can survive only in environments in which their needs can be met. DOK 2  SC-EP-3.4.4 Students will describe a variety of plant and animal life cycles to understand patterns of the growth, development, reproduction and death of an organism.  Plants and animals have life cycles that include the beginning of life, growth and development, reproduction and death. The details of a life cycle are different for different organisms. Observations of different life cycles should be made in order to identify patterns and recognize similarities and differences. DOK 2
69.	Who uses the wooded areas?  A. Classes? Yes <input type="checkbox"/> No <input type="checkbox"/> B. School Clubs? Yes <input type="checkbox"/> No <input type="checkbox"/> C. Student Athletes? Yes <input type="checkbox"/> No <input type="checkbox"/> D. Students Outside of Class? Yes <input type="checkbox"/> No <input type="checkbox"/> E. Staff? Yes <input type="checkbox"/> No <input type="checkbox"/> F. Community Members? Yes <input type="checkbox"/> No <input type="checkbox"/>			Fourth Grade  SC-04-3.4.1 Students will: • compare the different structures and functions of plants and animals that contribute to the growth, survival and reproduction of the organisms; • make inferences about the relationship between structure and function in organisms.  Each plant or animal has structures that serve different functions in growth, survival and reproduction. For example, humans have distinct body structures for walking, holding, seeing and talking. Evidence about the relationship between structure and function should be used to make inferences and draw conclusions. DOK 3
70.	How often are the wooded areas used (e.g. every day for one hour, once a week for 20 minutes)?			
71.	What types of wooded areas does your school have (e.g., upland hardwoods, pin-oak, bottomland hardwoods, mixed mesophytic, nonnative landscaping trees)?			
72.	What percentage of wooded areas is: A. Early Success ional (e.g., shrubs and saplings)? _____% B. Young Forest (e.g., pole timber, small diameter)? _____% C. Mature Forest (e.g., logs, large diameter)? _____% D. Climax Forest (e.g., trees over 200 years old, never cut)? _____% E. Explain how you determined your answer. _____			
73.	What plant species are growing in your wooded areas?			Fifth Grade  SC-05-3.4.1 Students will describe and compare living systems to understand the complementary



# Green Spaces Inventory

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74.	<p>How would you rate your forest health? Please explain your answer.</p> <p>Please use the following as a guide:</p> <p><b>*High</b> – 15 or more different native tree species per acre; exotic invasive species covering less than 10% of area; less than 10% of trees damaged by weather, or with dead or dying branches, holes in the trunk due to insect borers, mushrooms or fungi growing on the trunk, bleeding cankers (sores) on the trunk, loose or missing bark, or with disease vectors (leaf miners, blight, gypsy moth); all three layers of structural diversity (e.g., floor, understory, canopy)</p> <p><b>Medium</b> – between 6-14 different native tree species, exotic invasive species covering 10- 25% of area; 10-25% of trees damaged by weather, or with dead or dying branches, holes in the trunk due to insect borers, mushrooms or fungi growing on the trunk, bleeding cankers (sores) on the trunk, loose or missing bark, or with disease vectors (leaf miners, blight, gypsy moth); only two layers of structure.</p> <p><b>Low</b> – 5 or less different native tree species; exotic invasive species covering more than 25% of area; more than 25% of trees damaged by weather, or with dead or dying branches, holes in the trunk due to insect borers, mushrooms or fungi growing on the trunk, bleeding cankers (sores) on the trunk, loose or missing bark, or with disease vectors (leaf miners, blight, gypsy moth); only one layer of structural diversity (e.g., floor, understory, canopy)</p>			<p>nature of structure and function. Observations and comparisons of living systems at all levels of organization illustrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems. Examining the relationship between structure and function provides a basis for comparisons and classification schemes. DOK 2</p> <p>Sixth Grade</p> <p>SC-06-4.7.1 Students will describe the consequences of change in one or more abiotic factors on a population within an ecosystem. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). DOK</p> <p>Seventh Grade</p> <p>SC-07-4.7.1 Students will compare abiotic and biotic factors in an ecosystem in order to explain consequences of change in one or more factors. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. DOK 3</p> <p>Eighth Grade</p> <p>SC-08-4.7.1 Students will describe the interrelationships and interdependencies within an ecosystem and predict the effects of change on one or more components</p> <p>High School</p> <p>SS-HS-4.4.2 Students will explain how human modifications to the physical environment (e.g., deforestation, mining), perspectives on the use of natural resources (e.g., oil, water, land), and natural disasters (e.g., earthquakes, tsunamis, floods) may have possible global effects (e.g., global warming, destruction of the rainforest, acid rain) in the modern world (1500 A.D. to present) and United States (Reconstruction to present). DOK 2</p> <p>SC-HS-4.6.5 Students will describe and explain the role of carbon-containing molecules and chemical reactions in energy transfer in living systems. Living systems require a continuous input of energy to maintain their chemical and physical organization since the universal tendency is toward more disorganized states. The energy for life primarily derives from the Sun. Plants capture energy by absorbing light and using it to break weaker bonds in reactants (such as carbon dioxide and water)</p>
75.	What fertilizers and pesticides (including type, quantity and frequency) are applied to the wooded areas?			
76.	How is the need for pesticides and fertilizers for the wooded areas determined?			



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77.	How are the wooded areas managed (e.g., no logging, thinning, pruning, selected cutting, clear-cutting, wildlife habitat, recreation)?			<p>in chemical reactions that result in the formation of carbon-containing molecules. These molecules can be used to assemble larger molecules (e.g., DNA, proteins, sugars, fats). In addition, the energy released when these molecules react with oxygen to form very strong bonds can be used as sources of energy for life processes.</p> <p>DOK 3</p> <p>SC-HS-4.6.10</p> <p>Students will:</p> <p>identify the components and mechanisms of energy stored and released from food molecules (photosynthesis and respiration);</p> <p>apply information to real-world situations.</p> <p>Energy is released when the bonds of food molecules are broken and new compounds with lower energy bonds are formed. Cells usually store this energy temporarily in the phosphate bonds of adenosine triphosphate (ATP). During the process of cellular respiration, some energy is lost as heat.</p> <p>DOK 3</p> <p>SC-HS-4.7.1</p> <p>Students will:</p> <p>analyze relationships and interactions among organisms in ecosystems;</p> <p>predict the effects on other organisms of changes to one or more components of the ecosystem.</p> <p>Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years.</p> <p>DOK 3</p>
78.	How are products from the wooded areas used (e.g., left in forest for all to enjoy, logs, saplings or fruits sold to community, turned to mulch for school grounds, recreation use permitted)?			
79.	What animal species live in and around the wooded areas?			
80.	Are your wooded areas huntable?  Yes <input type="checkbox"/> No <input type="checkbox"/> Please explain:			
81.	What non-living features are found in the wooded areas (e.g., equipment, shelters, trails, signage)?			
82.	From what materials (e.g., arsenic-free wood, recycled materials, materials imported a great distance, trail surface) are these non-living features made?			